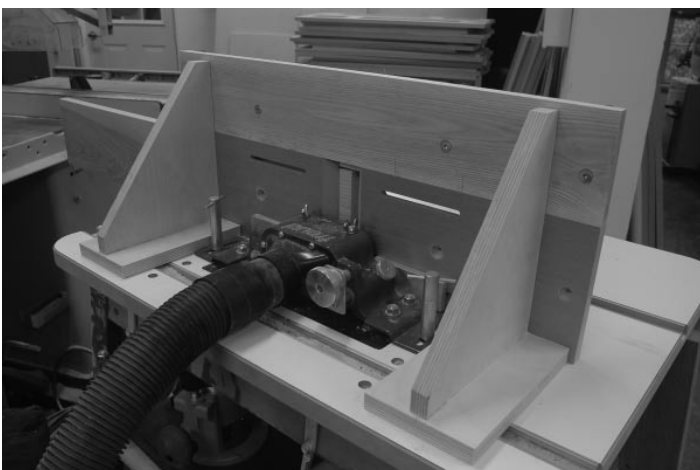# Build Your Own Wide Crown Router Table Fence

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Wide crown moulding router bits allow you to mill your own crown profiles up to 5 1/2" wide from ordinary, 3/4"-thick lumber using any good router table. But for accurate, safe results, you also need to build an extra-wide router table fence. Wide wood requires a big support surface and this technical bulletin shows you how to create what you need.

These plans and instructions lead step-by-step through the process of converting a standard Freud router table fence to the extra-wide configuration. This is the easiest way to get a crown-capable fence, but there's another advantage, too. This design also allows you to easily reconfigure the Freud fence back to a lower profile for ordinary router operations later on.

There are three parts to the fence extension job: widening the existing vertical fence surface; adding anchor points for the featherboards; and creating triangular supports on the back of the fence extension to keep it steady during use.

Parts & Materials List:

PART	MATERIAL	SIZE	QUANTITY
• Start-up fence boards (Freud #SH-5-11)	MDF	5/8" x 3" x 12"	4
• Fence cap	hardwood	5/8" x 4 1/4" x 25 1/2"	1
• Top featherboard base	hardwood or cabinet ply	1" x 2 3/4" x 9 1/2"	1
• Support gussets	cabinet ply	3/4" x 7 1/2" x 9 1/4"*	2
• Support gusset bases	cabinet ply	3/4" x 4 1/2" x 7 3/4"	2
• Featherboards (Freud #BF-3510)	plastic	—	5
• Top featherboard bolts	flat-head style	1/4-20 x 2"	6

Step#1: Add Vertical Fence Extensions

The Freud router table fence comes standard with two MDF faces – one on each side of the router bit opening, and the easiest way to begin adding fence height is by joining additional Freud inserts on top of the standard ones.

Glue alone won't be enough to make these edge-to-edge joints strong, so you'll need to reinforce them mechanically. You could use 1/4" diameter fluted dowels, though #20 biscuits work better. Remove the existing inserts from the fence, then prepare a place for three biscuits or dowels along the length of each fence piece. Apply glue, then clamp the joints tight.

The next stage of fence extension involves joining the two MDF fence faces with a single piece of wood. Hardwood is best. Whatever you use, make sure it's exactly the same thickness as the MDF you're joining it to. Use more biscuits or dowels to join these parts.

Step#2: Create Featherboard Anchor Points

At least five featherboards are required for milling successful crown moulding because workpieces must be held perfectly steady as they're being milled. The plans show where to drilled counterbored holes in the fence

face for the two featherboards that create downward pressure on the top edge of each workpiece, but that's not all that's required. In addition to the sideways pressure created by the two featherboards fastened to the router table top, similar sideways pressure is also required at the top of every workpiece. And to make this happen you need to prepare a horizontal featherboard support and fasten it to the fence face using more biscuits or dowels.

Step#3:
Install Fence Support Braces

Bolt your enhanced fence extension onto the metal Freud fence body and you'll immediately see why support braces are needed. The fence is now so tall that it's unable to remain solidly vertical during routing operations.

The plans show details of the triangular fence braces you need to build. Cabinet-grade plywood is best for this job because it's strong and stable. Join one support upright to one support base using glue and biscuit joints. It's essential that the support edge of each assembly be perfectly square to the base, so the fence will be square to the router table top during use.

After the glue has dried, dry-fit the support braces onto the back of the fence as it's bolted to the router table top. Mark the location of each brace in pencil on the back of the fence, then bore holes for screws that secure the support braces.

When your fence is done, bolt it to the router table, then double-check that it's square to the router table top. If not, use wedges to tweak the orientation, then start milling crown!

featherboard bolt holes for wide crown

1"

2 1/2"

3/4"

6"

9 1/4"

7 3/4"

6"

3"

1"

7 1/2"

SIDE VIEW

featherboard bolt holes for regular routing

FRONT VIEW

bolt holes for upper horizontal featherboard

9 1/2"

2"

6"

TOP FEATHERBOARD BASE DETAILS

support gusset

#20 biscuits

fence cap

top featherboard base

support gusset base

start-up fence boards